

[Ownership matrix](#)

TABLE OF CONTENTS

1.0	PURPOSE AND SCOPE	2
2.0	IMPLEMENTATION	2
3.0	STANDARD	2
3.1	Permit Requirements for New Activities	2
3.2	Permit Requirements for New/Existing Activities.....	3
3.3	Obtaining a Fire Permit.....	4
4.0	DEFINITIONS	4
5.0	SOURCES.....	4
5.1	Requirements	4
5.2	References.....	4

TABLE OF ATTACHMENTS

ATTACHMENT A – OCCUPANCY PERMIT REPORTING THRESHOLDS FOR HAZARDOUS MATERIALS	6
------------------------------------------------------------------------------------	---

ESHQ	Document	TFC-ESHQ-FP-STD-10, REV A-2
	Page	2 of 15
HANFORD FIRE MARSHAL PERMITS	Effective Date	March 7, 2006

1.0 PURPOSE AND SCOPE

(5.1.1, 5.1.2, 5.1.3)

This standard calls out the requirements for fire prevention permits that regulate activities within CH2M HILL's scope of work. This standard implements requirements from ORP M 420.1-1 and the National Fire Protection Association (NFPA) Code 1 (NFPA 1) "Uniform Fire Code™". This standard is to ensure the fire protection and prevention objectives and goals of the Tank Farm Contractor (TFC) Fire Protection Program are achieved.

These permits apply to activities performed within CH2M HILL's scope of work, including design and modifications affecting fire protection and all structure construction, occupancy, modification, remodeling, and demolition activities (interior and exterior).

2.0 IMPLEMENTATION

This standard is effective on the date shown in the header.

3.0 STANDARD

The construction/building manager or supervisor in charge must ensure that a permit request is submitted and a permit is obtained from the Hanford Fire Marshal's Office for the activities listed below before the activity commences or the design is released:

3.1 Permit Requirements for New Activities

Item	REQUIREMENT	SOURCE
1.	Automatic Suppression System - The installation or deactivation of automatic suppression systems.	NFPA 1; 1.12.19(a)
2.	Construction/Demolition - New construction projects, modifications to, or relocation of, existing facilities/structures and demolition of facilities and structures or portions thereof (includes using the Hanford Fire Marshal's Office Construction/Demolition Fire Safety Inspection Checklist (A-6002-692). See TFC-ESHQ-FP-STD-11 for additional requirements.	NFPA 1: 1.14
3.	Exhibit & Trade Shows - When these activities are conducted within the Hanford Site.	NFPA 1: 1.12.190(a)
4.	Fire Alarm and Detection Systems - The installation or deactivation of fire alarm and detection systems and related equipment.	NFPA 1: 1.12.19(a)
5.	Fire Hydrants - The installation, modification, or deactivation of a fire hydrant.	NFPA 1; 1.13.1.1.1
6.	Industrial Ovens - Operation of industrial ovens and furnaces.	NFPA 1; 1.12.19(a)

ESHQ	Document	TFC-ESHQ-FP-STD-10, REV A-2
	Page	3 of 15
HANFORD FIRE MARSHAL	Effective Date	March 7, 2006
PERMITS		

Item	REQUIREMENT	SOURCE
7.	Membrane Structures and Tents - Construction, location, erection, or placement of membrane structures, sprung structures, and tents.	NFPA 1; 1.12.19(a)
8.	Occupancy - The use and occupancy of a new facility and the re-occupancy or change of use and occupancy of an existing facility, including portable structures. NOTE: All mobile units (e.g., conex boxes, office trailers, construction trailers, hazardous storage units, cargo containers, etc.) require a number as soon as they get on site. Get the number assigned as soon as possible in accordance with HNF-PRO-2827 , but no later than when the occupancy permit is obtained.	NFPA 1; 10.3
9.	Other - Other activities not meeting one of these distinct categories yet falling under the scope of NFPA 1 permitting requirements	NFPA 1; 1.12
10.	Outdoor Burning - (excludes barbeques)	NFPA 1; 10.11
11.	Tar Kettles	NFPA 1; 1.12.19(a)
12.	Torch-Applied Roofing Systems, Installation of	NFPA 1; 1.12.19(a)

3.2 Permit Requirements for New/Existing Activities

Item	REQUIREMENT	SOURCE
1.	Chemicals – Greater than the quantities listed in Attachment A (except for those listed in items 2, 4, and 5). Exception – The Analytical Laboratory facilities operating in compliance with NFPA 45 are exempted from this item due to equivalent compliance.	NFPA 1; 1.12.19(d)
2.	Compressed Gas – Storage, handling, or use of compressed gases. Installation or modification of any compressed gas system. The amounts requiring a permit are listed in Attachment A relative to the specific hazard of the gas (e.g., flammable, etc.). NOTE: This includes liquid petroleum (LP) gas (over 120 gallon water capacity) installation or modification of the system, use, or storage location. Exception: The Analytical Laboratory facilities operating in compliance with NFPA 45 are exempted from this item due to equivalent compliance.	NFPA 1; 1.12.19(a)

ESHQ	Document	TFC-ESHQ-FP-STD-10, REV A-2
	Page	4 of 15
HANFORD FIRE MARSHAL PERMITS	Effective Date	March 7, 2006

Item	REQUIREMENT	SOURCE
3.	Cutting and Welding (Designated) – Designated cutting and welding operations.	NFPA 1: 1.12.190(a)
4.	Explosives – Includes explosive materials and operations.	NFPA 1: 1.12.19(a)
5.	Flammable and Combustible Liquids – Installation, storage, use, handling, or transportation of Class I and Class II flammable liquids or Class III combustible liquids.	Attachment A

3.3 Obtaining a Fire Permit

1. A permit is obtained by completing Section I of the [Hanford Fire Marshal Permit Request Form](#) and submitting the form to the Hanford Fire Marshal's office.

NOTE 1: Two working days are required for the Hanford Fire Marshall permit to be issued. The permit must be in place before activities are initiated.

NOTE 2: Hotwork Permits **are not** obtained through the Hanford Fire Marshal's Office, but the Hanford Fire Marshal Office must be notified of the hotwork activity as part of the hazard communication effort. (See [TFC-ESHQ-FP-C-01](#) for the requirements.)

2. A representative of the Hanford Fire Marshal's Office will provide approval for permit requests, determine required precautions, and provide hazard communication with the Hanford Fire Department.
3. A copy of the permit shall be posted or otherwise readily accessible at each place of operation. The copy may also be carried by the permit holder.
4. All specified permit requirements must be implemented and adhered to by the permit holder.

4.0 DEFINITIONS

No terms or phrases unique to this standard are used.

5.0 SOURCES

5.1 Requirements

1. DOE O 420.1A, "Facility Safety." (S/RID)
2. National Fire Protection Association, Code 1 (NFPA 1), "Uniform Fire Code."™
3. ORP M 420.1-1, "ORP Fire Protection Program." (S/RID)

5.2 References

ESHQ	Document	TFC-ESHQ-FP-STD-10, REV A-2
	Page	5 of 15
HANFORD FIRE MARSHAL	Effective Date	March 7, 2006
PERMITS		

1. HNF-PRO-2827, "Facility and Mobile Office Number Management."
2. TFC-ESHQ-FP-C-01, "Controls for Safe Hotwork."
3. TFC-ESHQ-FP-STD-11, "Fire Protection Requirements for Construction, Occupancy, Demolition Activities."

ATTACHMENT A – OCCUPANCY PERMIT REPORTING THRESHOLDS FOR HAZARDOUS MATERIALS

Chemical	Definition/Description	Minimum Amount Requiring Permit
Carcinogen	<p>A substance that causes the development of cancerous growths in living tissue. A chemical is considered to be a carcinogen if:</p> <ul style="list-style-type: none"> It has been evaluated by the International Agency for Research on Cancer (IARC) and found to be a carcinogen or potential carcinogen, or It is listed as a carcinogen or potential carcinogen in the latest edition of the Annual Report on Carcinogens published by the National Toxicology Program, or It is regulated by OSHA as a carcinogen. <p>Examples: Asbestos, benzene, beryllium, carbon tetrachloride, chloroform, diazomethane, P-dioxane, ethylene dichloride, and vinyl chloride.</p>	10 pounds
Cellulose Nitrate	(Pyroxylin) is a plastic substance, material, or compound, and cellulose nitrate film.	NFPA 1, Table 1.12.20(a)
Combustible Fiber	Readily ignitable and free-burning fibers, such as cotton, sisal, henequen, ixtle, jute, hemp, tow, cocoa fiber, oakum, baled waste, baled waste paper, kapok, hay, straw, excelsior, Spanish moss, or other like materials.	>100 cubic feet
Combustible Liquids	<p>A liquid having a flash point at or above 100°F. Combustible liquids are subdivided as follows. The category of combustible liquids does not include compressed gases or cryogenic fluids.</p> <ul style="list-style-type: none"> CLASS II liquids are those having flash points at or above 100°F and below 140°F. CLASS III-A liquids are those having flash points at or above 140°F and below 200°F CLASS III-B liquids are those liquids having flash points at or above 200°F. 	<p>>25 gallons inside</p> <p>>60 gallons outside (except fuel oil used in conjunction with oil burning equipment)</p> <p>Other processing, storage, and uses as determined by NFPA 1, Table 1.12.20(a)</p>

ATTACHMENT A – OCCUPANCY PERMIT REPORTING THRESHOLDS FOR HAZARDOUS MATERIALS (cont.)

Chemical	Definition/Description	Minimum Amount Requiring Permit
Corrosive Gases	Corrosive - a chemical that causes visible destruction of , or irreversible alterations in, living tissue by chemical action at the site of contact. A chemical is considered to be corrosive if, when tested on the intact skin of albino rabbits by the method described in Appendix A to CFR 49, Part 173, it destroys or changes irreversibly the structure of the tissue at the site of contact following an exposure period of four hours. This term does not refer to action of inanimate surfaces. Examples: Ammonia.	>200 cubic feet
Corrosive Liquids	A liquid which, when in contact with living tissue, will cause destruction or irreversible alteration of such tissue by chemical action. Examples include acidic, alkaline, or caustic materials.	55 gallons
Corrosive Solids	A solid which, when in contact with living tissue, will cause destruction or irreversible alteration of such tissue by chemical action. Examples: Acidic, alkaline, or caustic materials.	500 pounds
Cryogenics	A fluid that has a normal boiling point below 150°F Examples (flammable): Hydrogen, methane. Examples (oxidizing): Fluorine and liquid oxygen. Examples (corrosive): Fluorine.	NFPA 1, Table 1.12.20(c)
Explosives	<ol style="list-style-type: none"> 1. A chemical that causes a sudden, almost instantaneous release of pressure, gas, and heat when subjected to sudden shock, pressure, or high temperatures, or 2. A material or chemical, other than a blasting agent, that is commonly used or intended to be used for the purpose of producing an explosive effect and is regulated by Article 77. Examples: Dynamite, TNT, nitroglycerine, C-3, C-4, black powder, smokeless powder, propellant explosives, and display fireworks.	Any amount NFPA 1, Table .12.20(d)

ATTACHMENT A – OCCUPANCY PERMIT REPORTING THRESHOLDS FOR HAZARDOUS MATERIALS (cont.)

Chemical	Definition/Description	Minimum Amount Requiring Permit
Flammable Gas	Any material which is a gas at 68°F or less at 14.7 psia of pressure (a material has a boiling point of 68°F or less at 14.7 psia) which: <ul style="list-style-type: none"> Is ignitable at 14.7 psia when in a mixture of 13 percent or less by volume with air, or Has a flammable range at 14.7 psia with air of at least 12 percent, regardless of the lower limit. 	200 cubic feet NFPA 1, Table 1.12.20(b)
Flammable Liquids	A liquid having a flash point below 100°F and having a vapor pressure not exceeding 40 psia at 100°F. The category of flammable liquids does not include compressed gases or cryogenic fluids. Class I liquids include those having flash points below 100°F and are subdivided as follows: <ul style="list-style-type: none"> Class I-A liquids include those having a flash point below 73°F and having a boiling point below 100°F. Class I-B liquids include those having a flash point below 73°F and having a boiling point at or above 100°F. Class I-C liquids include those having a flash point at or above 73°F and below 100°F. 	>5 gal. inside >10 gal. outside Other processing, storage, and uses as determined by NFPA 1, Table 1.12.20(a)
Flammable Solids	A solid substance, other than one which is defined as a blasting agent or explosive, that is liable to cause fire through friction or as a result of retained heat from manufacture, which has an ignition temperature below 212°F, or which burns so vigorously or persistently when ignited that it creates a serious hazard. Flammable solids include finely divided solid materials which, when dispersed in, or as, a cloud could be ignited and cause an explosion. Examples (organic): Camphor, cellulose nitrate, and naphthalene. Examples (inorganic): decaborane, lithium amide, phosphorous heptasulfide, phosphorous sesquisulfide, potassium sulfide, anhydrous sodium sulfide and sulfur.	100 pounds

ATTACHMENT A – OCCUPANCY PERMIT REPORTING THRESHOLDS FOR HAZARDOUS MATERIALS (cont.)

Chemical	Definition/Description	Minimum Amount Requiring Permit
Highly Toxic Gases, Liquids, and Solids (including pesticides and fumigants)	<p>A material which produces a lethal dose or lethal concentration which falls within any of the following categories:</p> <ul style="list-style-type: none"> • A chemical that has a median lethal dose (LD50) of 50 milligrams or less per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each • A chemical that has a median lethal dose (LD50) of 200 milligrams or less per kilogram of body weight when administered by continuous contact for 24 hours, or less if death occurs within 24 hours, with the base skin of albino rabbits weighing between 2 and 3 kilograms each • A chemical that has a median lethal dose concentration (LD50) in air of 200 parts per million by volume or less of gas or vapor, or 2 milligrams per liter or less of mist, fume, or dust, when administered by continuous inhalation for one hour, or less if death occurs within one hour, to albino rats weighing between 200 and 300 grams each. <p>Mixtures of these materials with ordinary materials, such as water, might not warrant classification as highly toxic. While this system is basically simple in application, any hazard evaluation that is required for the precise categorization of this type of material shall be performed by experienced, technically competent persons.</p>	Any amount
Inert and Simple Asphyxiant Gases	<p>An asphyxiant is a substance that can cause unconsciousness or death by suffocation (asphyxiation). Asphyxiants themselves are not toxic materials. They work by displacing so much oxygen from the ambient atmosphere that the hemoglobin in the blood cannot pick up enough oxygen from the lungs to fully oxygenate the tissues. As a result, the victim slowly suffocates.</p> <p>Examples: Nitrogen (N₂), helium (He), neon (Ne), argon (Ar), methane (CH₄), propane (CH₃CH₂CH₃), and carbon dioxide (CO₂).</p>	6,000 cubic feet

ATTACHMENT A – OCCUPANCY PERMIT REPORTING THRESHOLDS FOR HAZARDOUS MATERIALS (cont.)

Chemical	Definition/Description	Minimum Amount Requiring Permit
Irritant Liquids	An irritant is a substance which is not corrosive, but which causes a reversible inflammatory effect on living tissue by chemical action at the site of contact. Examples: Diphenylaminechloroarsine, xylyl bromide, and chloracetophene.	55 gal.
Irritant Solids	An irritant is a substance which is not corrosive, but which causes a reversible inflammatory effect on living tissue by chemical action at the site of contact.	500 pounds
Irritant Gases	An irritant is a substance which is not corrosive but which causes a reversible inflammatory effect on living tissue by chemical action at the site of contact.	200 cubic feet
Liquefied Petroleum Gases	A material that is composed predominantly of the following hydrocarbons or mixtures of them: propane, propylene, butane (normal butane or isobutene) and butylenes.	>120 gal. (water capacity)
Magnesium	The pure metal and alloys of which the major part is magnesium.	>10 pounds
Nitrate Film	See explosive materials - not in general use today.	Any amount
Oxidizing Gases	A material other than a blasting agent or explosive that irritates or promotes combustion other materials, thereby causing fire either of itself or through the release of oxygen or gases. Examples: oxygen, ozone, oxides of nitrogen fluorine and chlorine.	504 cubic feet
Oxidizing Liquids	Same as above. Examples: bromine, hydrogen peroxide, nitric acid, perchloric acid, sulfuric acid.	Class 4 - any amount Class 3 - 1 gal. Class 2 - 10 gal. Class 1 - 55 gal.

ATTACHMENT A – OCCUPANCY PERMIT REPORTING THRESHOLDS FOR HAZARDOUS MATERIALS (cont.)

Chemical	Definition/Description	Minimum Amount Requiring Permit
Oxidizing Solids	A material other than a blasting agent or explosive that initiates or promotes combustion in other materials, thereby causing fire either of itself or through the release of oxygen or other gases. Examples: chlorates, chromates, chromic acid, iodine, nitrates, perchlorates, peroxides.	Class 4 - Any amount Class 3 - 10 pounds Class 2 - 100 pounds Class 1 - 500 pounds
Organic Peroxide Liquids and Solids	An organic compound that contains the bivalent –O-O- structure and which may be considered to be a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms have been replaced by an organic radical. Organic peroxides can present an explosion hazard (detonation or deflagration) or they can be shock sensitive. They can also decompose into various unstable compounds over an extended period of time. Examples: Class 1 - acetyl cyclohexane sulfonyl 60-65% concentration by weight, fulfonyl peroxide, diisopropyl peroxydicarbonate 100%. Class 2 - acetyl peroxide 25%, t-butyl hydroperoxide 70%, peroxyacetic acid 43%. Class 3 - benzoyl peroxide 78%, cumene hydroperoxide 86%, decanoyl peroxide 98.5%. Class 4 - benzoyl peroxide 70%, t-butyl hydroperoxide 70%, decumyl peroxide 98%. Class 5 - benzoyl peroxide 35%, 1,1-di-tbutyl peroxy 3,5,5-trimethylcyclohexane 40%.	Class I - Any amount Class II - Any amount Class III - 10 pounds Class IV - 20 pounds

ATTACHMENT A – OCCUPANCY PERMIT REPORTING THRESHOLDS FOR HAZARDOUS MATERIALS (cont.)

Chemical	Definition/Description	Minimum Amount Requiring Permit
Other Health Hazards	<p>A hazardous material which affects target organs of the body, including, but not limited to, those materials which produce liver damage, kidney damage, damage to the nervous system, act on the blood to decrease hemoglobin function, deprive the body tissue of oxygen, or affect reproductive capabilities, including mutations (chromosomal damage) or teratogens (effects on fetuses).</p> <p>Examples: carbon tetrachloride, nitrosamines, halogenated hydrocarbons, uranium, mercury, carbon disulfide, carbon monoxide, cyanides, silica, asbestos, lead, PBCP.</p>	<p>Liquids - 55 gal.</p> <p>Solids - 500 pounds</p>
Pyrophoric Gases	<p>A material that will spontaneously ignite in air at or below a temperature of 130°F.</p> <p>Examples: diborane, phosphine, silane.</p>	Any amount
Pyrophoric Liquids	<p>A material that will spontaneously ignite in air at or below a temperature of 130°F.</p> <p>Examples: diethyl aluminum chloride, diethyl beryllium, diethyl phosphine, diethyl zinc, dimethyl arsine, triethyl aluminum etherate, triethyl bismuth, triethyl borane, trimethyl aluminum and trimethyl gallium.</p>	Any amount
Pyrophoric Solids	<p>A material that will spontaneously ignite in air at or below a temperature of 130°F.</p> <p>Examples: cesium, hafnium, lithium, white or yellow phosphorus, plutonium, potassium, rubidium, sodium and thorium.</p>	Any amount
Sensitizer Liquids	A material that causes a substantial proportion of exposed people or animals to develop an allergic reaction in normal tissue after repeated exposure to the chemical.	55 gal.
Sensitizer Solids	A material that causes a substantial proportion of exposed people or animals to develop an allergic reaction in normal tissue after repeated exposure to the chemical.	500 pounds

ATTACHMENT A – OCCUPANCY PERMIT REPORTING THRESHOLDS FOR HAZARDOUS MATERIALS (cont.)

Chemical	Definition/Description	Minimum Amount Requiring Permit
Sensitizer Gases	A material that causes a substantial proportion of exposed people or animals to develop an allergic reaction in normal tissue after repeated exposure to the chemical.	200 cubic feet
Toxic Gases	<p>A material which produces a lethal dose or a lethal concentration within any of the following categories:</p> <ul style="list-style-type: none"> • A material that has a median lethal dose (LD50) of 50 milligrams or less per kilogram but not more than 500 milligrams per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each. • A material that has a median lethal dose (LD50) of more than 200 milligrams per kilogram but not more than 1,000 milligrams per kilogram of body weight when administered by continuous contact for 24 hours, or less if death occurs within 24 hours, with the bare skin of albino rabbits weighing between 2 and 3 kilograms each. • A material that has a median lethal concentration (LD50) in air more than 200 parts per million but not more than 2,000 parts per million by volume of gas or vapor, or more than two milligrams per liter but not more than 20 milligrams per liter of mist, fume or dust, when administered by continuous inhalation for one hour, or less if death occurs within one hour, to albino rats weighing between 200 and 300 grams each. <p>Examples: arsine, cyanogen, diborane, fluorine, germane, hydrogen cyanide, nitric oxide.</p>	Any amount
Toxic Liquids	<p>Same as above.</p> <p>Examples: acrolein, acrylic acid, hydrazine, hydrocyanic acid, trimethane, tetraethylstannane.</p>	10 gal.

ATTACHMENT A – OCCUPANCY PERMIT REPORTING THRESHOLDS FOR HAZARDOUS
MATERIALS (cont.)

Chemical	Definition/Description	Minimum Amount Requiring Permit
Toxic Solids	Same as above. Examples: phenylmercury, arsenic pentoxide, calcium cyanide, aflatoxin B, barium chloride, cadmium chloride, chromium oxide, mercury chloride.	100 pounds
Unstable (Reactive) Gases	A material, other than an explosive, which, in the pure state or as commercially produced, will vigorously polymerize, decompose, condense or become self-reactive and undergo other violent chemical changes, including explosion, when exposed to heat, friction or shock, or in the absence of an inhibitor or in the presence of contaminants or in contact with non-compatible materials.	Class 4 - Any amount Class 3 - Any amount Class 2 - 50 pounds Class 1 - 100 pounds
Unstable (Reactive) Liquids	A material, which in the pure state, or as produced or transported, will vigorously polymerize, decompose, condense, or will become self-reactive under conditions of shock, pressure or temperature. Examples: Class 4 – acetyl peroxide, dibutyl peroxide, dinitrobenzene, ethyl nitrate, peroxyacetic acid, trinitrobenzene. Class 3 – hydrogen peroxide >52%, hydroxylamine, paranitroaniline, perchloric acid. Class 2 – acrolein, acrylic acid, hydrazine, methacrylic acid, sodium perchlorate, styrene. Class 1 – acetic acid hydrogen peroxide 35% to 52%, paraldehyde, tetrahydrofuran.	Class 4 - Any amount Class 3 - Any amount Class 2 - 5 gal. Class 1 - 10 gal.

ATTACHMENT A – OCCUPANCY PERMIT REPORTING THRESHOLDS FOR HAZARDOUS MATERIALS (cont.)

Chemical	Definition/Description	Minimum Amount Requiring Permit
Water Reactive Liquids	<p>A material which explodes; violently reacts; produces flammable, toxic or other hazardous gases; or evolves enough heat to cause self-ignition or ignition of nearby combustibles upon exposure to water or moisture.</p> <p>Examples:</p> <p>Class 3 - triethylaluminum, isobutylaluminum, trimethylaluminum, bromine pentafluoride, bromine trifluoride.</p> <p>Class 2 - calcium carbide, calcium metal, cyanogen bromide, lithium hydride, potassium metal, sodium metal, sodium peroxide, sulfuric acid.</p> <p>Class 1 - acetic anhydride, sodium hydroxide, sulfur monochloride, titanium tetrachloride.</p>	<p>Class 3 - Any amount</p> <p>Class 2 - 5 gal.</p> <p>Class 1 - 10 gal.</p>
Water Reactive Solids	<p>Same as above.</p>	<p>Class 3 - Any amount</p> <p>Class 2 - 50 pounds</p> <p>Class 1 - 100 pounds</p>